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Santosh Kumar Sadananda

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EXAMINER

LI, SHI K

ART UNIT

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2613

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/781,227	Applicant(s) SADANANDA, SANTOSH KUMAR	
	Examiner Shi K. Li	Art Unit 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39, 41-46 and 48-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39, 41-46, 48-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 26 February 2008 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-39, 41-46, 48-52 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 recites the limitation "each of the working paths within the group is associated with a different and unique priority" in lines 13-14 of the claim. Instant specification, as originally filed, does not describe the limitation in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 15 recites the limitation “each of the working paths within the group is associated with a different and unique priority” in lines 14-16 of the claim. Instant specification, as originally filed, does not describe the limitation in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 21 recites the limitation “each of the working paths within the group is associated with a different and unique priority” in lines 11-12 of the claim. Instant specification, as originally filed, does not describe the limitation in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 30 recites the limitation “each of the working paths within the group is associated with a different and unique priority” in lines 19-21 of the claim. Instant specification, as originally filed, does not describe the limitation in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 39 recites the limitation “each of the working paths within the group is associated with a different and unique priority” in lines 14-15 of the claim. Instant specification, as originally filed, does not describe the limitation in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 46 recites the limitation “each of the working paths within the group is associated with a different and unique priority” in lines 21-23 of the claim. Instant specification, as

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originally filed, does not describe the limitation in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 9-13, 27-28 and 43-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 recites the limitation "if the existing protection path cannot be found" in lines 1-2 of the claim. However, claim 9 depends on claim 6 which recites the locating and selecting steps. That is the existing protection path has been found in the steps recited in claim 6.

Claim 27 recites the limitation "if the protection path is not being used by the second working path". However, claim 27 depends on claim 21 which recites the assigning step that follows the affirmation of the determining step.

6. Claim 43 recites the limitation "the second protection path" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 1-13 and 15-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chaudhuri et al. (U.S. Patent 6,587,235 B1) in view of Friskney et al. (U.S. Patent Application Pub. 2004/0120705 A1).

Regarding claims 1 and 15, Chaudhuri et al. teaches in FIG. 5 a shared protection scheme where traffics are assigned different priorities: super premium, standard and restoration.

Chaudhuri et al. teaches in col. 7, lines 60-61 that the number of R channels equals the number of SP channels. Therefore, each of the SP channels does not share protection with another SP channel. The difference between Chaudhuri et al. and the claimed invention is that Chaudhuri et al. does not teach receiving request for allocating protection path that meets a set of disjointness constraints. Friskney et al. teaches in [0117] link- disjoint and node-disjoint path and in FIG. 4 that path request specifies source, destination and resilience requirements. One of ordinary skill in the art would have been motivated to combine the teaching of Friskney et al. with the shared protection scheme of Chaudhuri et al. because specifying resilience requirements in path request allows the path preparation system to find paths that fulfill the customer's need. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to include disjointness in path request, as taught by Friskney et al., in the shared protection scheme of Chaudhuri et al. because specifying resilience requirements in path request allows the path preparation system to find paths that fulfill the customer's need.

Regarding claims 2 and 16, Chaudhuri et al. teaches in FIG. 5 that the protection path is maximally shared by working paths.

Regarding claims 3-5 and 18-20, the use of counter/database to keep track of values is well known in the art. For example, see FIG. 3 of Doshi et al. (U.S. Patent Application Pub. 2004/0205239 A1).

Regarding claims 6-7 and 9-12, Friskney et al. teaches in FIG. 4 to find working path and restoration path according to requirements.

Regarding claims 8 and 17, Chaudhuri et al. specifies that a restoration channel can be shared by a super premium channel and a standard channel.

Regarding claims 13 and 21-22, Friskney et al. teaches in paragraph [0015] that high priority traffic preempts low priority traffic.

Regarding claims 23, 25 and 27, Chaudhuri et al. teaches in FIG. 5 and FIG. 6 the assignment of traffics with different priority.

Regarding claims 24, 26, 28-31, 34 and 36, the use of counter/database to keep track of values is well known in the art. For example, see FIG. 3 of Doshi et al. (U.S. Patent Application Pub. 2004/0205239 A1).

Regarding claim 32-33, 35 and 37-38, Chaudhuri et al. teaches in FIG. 5 and FIG. 6 the assignment of traffics with different priority.

9. Claims 1-13, 15-22, 27-31 and 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oksanen et al. (U.S. Patent Application Pub. 2004/0057724 A1) in view of Allen (U.S. Patent 5,933,590) and Saleh et al. (U.S. Patent 2005/0036442 A1).

Regarding claims 1 and 15, Oksanen et al. teaches in FIG. 5 a 1:N protection scheme where fibers 51, 52 and 54 are working fibers and fiber 55 is a protection fiber. Oksanen et al. teaches in paragraph [0055] that a different priority level can be specified for each of the fibers 51-54. Oksanen et al. indicates in FIG. 5 that fiber 55 is a link-disjoint route. Oksanen et al. teaches in paragraph [0031] wavelength division technology (WDM) where parallel fibers having traffic to same direction can be replaced by a single fiber that can carry multiple optical channels. For example, fibers 51, 52 and 54 can be replaced by a single fiber using WDM technology. Therefore, Oksanen et al. teaches a WDM optical network. The difference between

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Oksanen et al. and the claimed invention is that Oksanen et al. does not teach that the priority is unique. Allen teaches in col. 5, lines 15 assigning unique relative priority numbers for protection. One of ordinary skill in the art would have been motivated to combine the teaching of Allen with the WDM network of Oksanen et al. because a unique priority number ensures that no two working paths have the same priority and, therefore, all contention for protection can be resolved based on priority level. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to assign unique priority numbers, as taught by Allen, in the WDM network of Oksanen et al. because a unique priority number ensures that no two working paths have the same priority and, therefore, all contention for protection can be resolved based on priority level.

The combination of Oksanen et al. and Allen still fails to teach provisioning the paths (i.e., the steps of receiving a demand and selecting protection path). Saleh et al. teaches in paragraphs [0036] through [0041] provisioning of 1:N protection. One of ordinary skill in the art would have been motivated to combine the teaching of Saleh et al. with the modified WDM network of Oksanen et al. and Allen because a protection scheme must be provisioned before its operation. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to provision 1:N protection, as taught by Saleh et al., in the modified WDM network of Oksanen et al. and Allen because a protection scheme must be provisioned before its operation.

Regarding claims 2 and 16, it is obvious that the number of working paths that shares a protection path is engineered based on the quality of service.

Regarding claims 3-5 and 18-20, the use of counter/database to keep track of values is well known in the art. For example, see FIG. 3 of Doshi et al. (U.S. Patent Application Pub. 2004/0205239 A1).

Regarding claims 6-7 and 9-12, it is obvious that if there is a protection path having the same source and destination as the demand, the protection path can be used if the number of existing working paths that share the protection path is less than N. Otherwise, a new protection path is identified.

Regarding claims 8 and 17, Saleh et al. teaches in paragraph [0039] that a use can identify the threshold number 'N'.

Regarding claims 13 and 21-22, Oksanen et al. teaches in paragraph [0055] preempting traffic of lower priority.

Regarding claim 30, Saleh et al. teaches in paragraph [0033] node database for storing information.

Regarding claim 31, Oksanen et al. teaches in paragraph [0055] preempting traffic of lower priority.

10. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chaudhuri et al. and Friskney et al. as applied to claims 1-13 and 15-38 above, and further in view of Elie-Dit-Cosaque et al. (U.S. Patent Application Pub. 2004/0218525 A1).

Chaudhuri et al. and Friskney et al. have been discussed above in regard to claims 1-13 and 15-38. Friskney et al. teaches in [0117] link-disjoint and node-disjoint path. Furthermore, Elie-Dit-Cosaque et al. teaches in paragraph [0008] completely disjoint and partially disjoint and in FIG. 5A-FIG. 5E link-disjoint and node-disjoint paths. One of ordinary skill in the art would

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have been motivated to combine the teaching of Elie-Dit-Cosaque et al. with the modified shared protection scheme of Chaudhuri et al. and Friskney et al. to allow for completely disjoint and partially disjoint paths as backup paths because it reduces the cost of protection and gives customers choices for comprising between cost and reliability. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide choices for partially/completely link/node-disjoint, as taught by Elie-Dit-Cosaque et al., in the modified shared protection scheme of Chaudhuri et al. and Friskney et al. to allow for completely link/node disjoint and partially link/node disjoint paths as backup paths because it reduces the cost of protection and gives customers choices for comprising between cost and reliability.

11. Claims 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oksanen et al., Allen and Saleh et al. as applied to claims 1-13, 15-22, 27-31 and 36-38 above, and further in view of Elie-Dit-Cosaque et al. (U.S. Patent Application Pub. 2004/0218525 A1).

Oksanen et al., Allen and Saleh et al. have been discussed above in regard to claims 1-13, 15-22, 27-31 and 36-38. Oksanen et al. indicates in FIG. 5 that protection fiber 55 is link-disjoint from working fibers 51, 52 and 54. However, Oksanen et al. does not expressly teach the term link-disjoint. Elie-Dit-Cosaque et al. teaches in paragraph [0008] completely disjoint and partially disjoint and in FIG. 5A-FIG. 5E link-disjoint and node-disjoint paths. One of ordinary skill in the art would have been motivated to combine the teaching of Elie-Dit-Cosaque et al. with the modified shared protection scheme of Oksanen et al., Allen and Saleh et al. to allow for completely disjoint and partially disjoint paths as backup paths because it reduces the cost of protection and gives customers choices for comprising between cost and reliability. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to

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provide choices for partially/completely link/node-disjoint, as taught by Elie-Dit-Cosaque et al., in the modified shared protection scheme of Oksanen et al., Allen and Saleh et al. to allow for completely link/node disjoint and partially link/node disjoint paths as backup paths because it reduces the cost of protection and gives customers choices for comprising between cost and reliability.

12. Claims 39, 43-46 and 50-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chaudhuri et al. and Friskney et al. as applied to claims 1-13 and 15-38 above, and further in view of Chaudhuri (U.S. Patent 6,130,876).

Chaudhuri et al. and Friskney et al. have been discussed above in regard to claims 1-13 and 15-38. The difference between Chaudhuri et al. and Friskney et al. and the claimed invention is that Chaudhuri et al. and Friskney et al. do not teach reversion after failure has been repaired. Chaudhuri et al. cites in col. 6, lines 26-30 U.S. patent application 08/936,369, which is issued as patent 6,130,876, for control system for handling protection. Chaudhuri teaches in FIG. 4, step 54 that when the failed link is repaired the traffics are reverted to their original state. One of ordinary skill in the art would have been motivated to combine the teaching of Chaudhuri with the modified shared protection scheme of Chaudhuri et al. and Friskney et al. because reverting traffic to a repaired path allows the protection path to be used for carrying low priority traffic. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to revert to working path when the working path has been repaired, as taught by Chaudhuri, in the modified shared protection scheme of Chaudhuri et al. and Friskney et al. because reverting traffic to a repaired path allows the protection path to be used for carrying low priority traffic.

13. Claims 39, 43-46 and 50-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oksanen et al., Allen and Saleh et al. as applied to claims 1-13, 15-22, 27-31 and 36-38 above, and further in view of Chaudhuri (U.S. Patent 6,130,876).

Oksanen et al., Allen and Saleh et al. have been discussed above in regard to claims 1-13, 15-22, 27-31 and 36-38. The difference between Oksanen et al., Allen and Saleh et al. and the claimed invention is that Oksanen et al., Allen and Saleh et al. do not teach reversion after failure has been repaired. Chaudhuri teaches in FIG. 4, step 54 that when the failed link is repaired the traffics are reverted to their original state. One of ordinary skill in the art would have been motivated to combine the teaching of Chaudhuri with the modified shared protection scheme of Oksanen et al., Allen and Saleh et al. because reverting traffic to a repaired path allows the protection path to be used for carrying low priority traffic. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to revert to working path when the working path has been repaired, as taught by Chaudhuri, in the modified shared protection scheme of Oksanen et al., Allen and Saleh et al. because reverting traffic to a repaired path allows the protection path to be used for carrying low priority traffic.

14. Claims 41-42 and 48-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chaudhuri et al., Friskney et al. and Chaudhuri as applied to claims 39, 43-46 and 50-52 above, and further in view of Elie-Dit-Cosaque et al. (U.S. Patent Application Pub. 2004/0218525 A1).

Chaudhuri et al., Friskney et al. and Chaudhuri have been discussed above in regard to claims 39, 43-46 and 50-52. Friskney et al. teaches in [0117] link-disjoint and node-disjoint path. Furthermore, Elie-Dit-Cosaque et al. teaches in paragraph [0008] completely disjoint and partially disjoint and in FIG. 5A-FIG. 5E link-disjoint and node-disjoint paths. One of ordinary

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skill in the art would have been motivated to combine the teaching of Elie-Dit-Cosaque et al. with the modified shared protection scheme of Chaudhuri et al., Friskney et al. and Chaudhuri to allow for completely disjoint and partially disjoint paths as backup paths because it reduces the cost of protection and gives customers choices for comprising between cost and reliability. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide choices for partially/completely link/node-disjoint, as taught by Elie-Dit-Cosaque et al., in the modified shared protection scheme of Chaudhuri et al., Friskney et al. and Chaudhuri to allow for completely link/node disjoint and partially link/node disjoint paths as backup paths because it reduces the cost of protection and gives customers choices for comprising between cost and reliability.

Response to Arguments

15. Applicant's arguments filed 26 February 2008 have been fully considered but they are not persuasive.

The Applicant argues that “regarding 1:N protection scheme used by S channels, there is no disclosure within Chaudhuri '235 patent that each of the S channels that share the same protection path is associated with a different and unique priority for the contention resolution purposes. In Chaudhuri '235 patent's system, if there were multiple S channels fail at the same time, it is difficult to determine which of the failed S channels gets the shared protection path since they have the same priority.” However, Chaudhuri et al. can be viewed as a 1:2 protection where an R channel protects an SP channel and an S channel. The three channels have different priorities and read on claim 1.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shi K. Li whose telephone number is 571 272-3031. The examiner can normally be reached on Monday-Friday (7:30 a.m. - 4:30 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

skl
4 June 2008

/Shi K. Li/
Primary Examiner, Art Unit 2613